



Integration of urban woodland policies

a case study of urban woodland policies as an element of current green structure planning i Danish communities and the co-operation between public authorities

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1. Introduction

This study is part of the European NeighbourWoods research and development project, supported by the European Commission's Fifth Framework Programme, theme "Quality of Life and Management of Living Resources". NeighbourWoods aims to compile experiences within the design, planning and management of urban woodlands in Europe. Moreover, it sets out to develop innovative design, planning and management methods and tools, and to disseminate its findings among relevant audiences. Institutions from seven countries participate in the project, namely Belgium, Bulgaria, Denmark, Finland, Italy, Sweden, and the United Kingdom.

The NeighbourWoods project team wants to help enhance urban woodlands' multiple benefits in urbanising societies of Europe. The following activities are carried out for this purpose:

- Identify and analyse good practices in planning, design and management of urban woodlands in Europe, with special focus on information tools for decision support and on public participation.
- Develop and test/evaluate a set of planning, design and management tools in six selected European cases, and in a participatory way.
- Contribute to policy-making and planning aimed at urban woodland conservation, management and development in Europe.
- Disseminate the project's findings.

The study presented here is one of the two Danish elements of the larger Øresund case study, coordinated by the Department of Landscape Planning Alnarp. Through a series of subprojects like this, the Øresund case study studies a set of planning, design and management tools. The subproject presented here analyses the role of urban woodlands within municipal green area and structure planning and management in selected Danish cities, as well as cooperation between different public actors in urban woodland planning, design and management.

The study's findings are directed towards the following target groups (in Denmark as well as abroad):

- Public policy-makers, planners and managers of urban woodlands.
- Private actors, including interest groups, that are involved with urban woodlands

2. Research Objectives

The study's objective is to map and describe "good practices" in particularly policy-making and planning of urban woodlands in two selected, larger provincial municipalities within the Danish part of the Øresund-region. Some attention is also given to links between strategic aspects and urban woodland management.

The study also aims to examine links between municipal green structure planning and the current design, planning and management of urban woodlands. This is done from the perspective of urban woodlands as important elements of the overall urban greenspace resource.

By studying the processes and actors involved in urban woodland policy-making and planning especially within the context of urban afforestation, the research wants to identify success factors and aspects of innovation. Promising tools for urban woodland policy-making and planning are to be identified.

In line with the above, the study's immediate objectives are:

- To assess urban woodland policies and planning and their integration in municipal green structure and greenspace policies and planning.
- To study co-operation between local, regional and state authorities with regards urban woodland policy-making and planning.
- To identify and evaluate specific, promising tools for urban woodland policy-making and planning, and to some extent design.

3. Methodology

The study has followed a case study approach, selecting two 'NeighbourWoods situations' in the Danish part of the Øresund-area. The two cases were selected primarily based on the following criteria:

- Recent/ongoing urban afforestation taking place.
- Involvement of municipal, regional and state institutions in urban afforestation.
- Focus on middle-sized towns.
- Availability of information and willingness of local actors to participate.

The case studies were accompanied by an overall study of literature and planning/policy documents, in order to obtain a thorough insight in forest policy and planning laws and regulations in Denmark. The literature and document analysis considered municipal plans, legal and organisation frameworks, green structure strategies or plans, management plans, topographic maps, hiking folders, as well as Internet homepages.

Within the case studies, the primary means for collecting data were semi-structured interviews with main public actors (see Annex 1), field visits, literature study, and policy/planning analysis. For the interviews with representatives of authorities responsible for or involved with urban woodlands and other green areas, an interview guide was developed in order to provide a comparative frame for analysis (see Annex 2). Interviews were accompanied by field visits and study of available written and Internet material as well as introductory phone calls with the responsible authorities. The written material used in the case studies included:

- Documents on the state's forest policy and national strategy for afforestation.
- Regional plans on afforestation.
- Municipal plans where these dealt with afforestation and landscape issues.
- Green Structure Plans where available.

Although only two case studies were included, the standardised research approach and selection of cases should enable drawing conclusions and providing perspectives at a more general level.

The project was co-ordinated by a project group which included Professor Ib Asger Olsen and Dr Jens Balsby Nielsen (Royal Veterinary and Agricultural University, Section for Landscape) and Dr Cecil Konijnendijk (Danish Forest and Landscape Research Institute). Main researcher and interviewer was Karen Sejr Petersen. The experts involved met several times to map relevant issues, formulate key questions, draw conclusions and elaborate on future perspectives.

4. Framework for New Urban Woodland in Denmark

Forest Policy

State forest policy

In Denmark, the forest sector is under the jurisdiction of the Ministry of Environment. The responsibility has been delegated to the Danish Forest and Nature Agency, which includes 25 forest districts that manage the 24% of the total forest area which is owned by the state.

Today Denmark has a forest cover of approximately 445,000 ha, i.e. 10 – 12 % of the land (Skov- og Naturstyrelsen 2003).

The first Danish forestry regulation was issued in 1805. The present Forest Act from 1997 has four primary objectives:

- Conserve and protect the Danish forests.
- Improve the stability of the forest sector, its ownership structure and productivity.
- Contribute to increasing the forest cover.
- Strengthen advisory services and information on good and multiple use forest management.

Afforestation policy

In 1989 the government took the political decision to double the forest area within a tree generation (i.e. 80-100 years), implying an average forest expansion of 5,000 ha per year. Afforestation was to be carried out both on public and private land. Initially, agricultural overproduction and the need to find alternative land uses was an important trigger. The main objectives of afforestation shifted over time, and currently include protecting drinking water resources and enhancing natural values, providing opportunities for outdoor recreation, and protecting cultural heritage. In an urbanised society such as Denmark, these urban woodland benefits are of increasing importance. A recent national survey, for example, showed that the Danish forests and nature areas receive 50 million visits per year. Urban woodlands are among the most visited areas for outdoor recreation (Skov & Landskab 2003). In line with this, the afforestation policy and its accompanying subvention scheme prioritise afforestation close to cities and towns.

According to the Danish National Forest Programme, as e.g. described in an international perspective (Danish Forest and Nature Agency 2002), envisions a revision of the 1996 Forest Act. This new act, which is currently being prepared, would mean a very significant change in Danish forestry. Central to the new act as well as overall policy is a transition from the current forest management regime to close-to-nature forestry. Biodiversity and recreational objectives will become even more central, and the principles of close-to-nature forestry will also provide the basis for all future afforestation. When deciding on the location of new forests, due consideration should be given to the need for landscape corridors and amenity values.

In order to support (state) afforestation “on the ground”, the Danish Forest and Nature Agency has prepared an internal guide for afforestation: “God Statslig skovrejsning – checkliste for god statslig skovrejsning” (checklist for sound afforestation by the state). These guidelines e.g. describe how to deal with recreation and environmental issues,

natural values, landscape, preservation of cultural heritage, and production of timber when establishing new forest. However, no specific guidelines for urban afforestation are provided.

Forest User Boards

In line with e.g. the Aarhus Convention on public involvement in environmental decision-making, public participation is mentioned as an important element of the Danish afforestation policy. In 1995, so-called "Brugerråder" ("User Boards") were set up in all state forest districts. The idea was that forest users, organised as well as non-organised, should have influence on the management of state forests. User boards bring together representatives of different interest groups, such as the Danish Outdoor Council ("Friluftsrådet"), Danish Nature Conservation Society, Danish Sports Association, as well as state, regional and municipal authorities. The user boards have primarily acted as discussion platforms, where questions, proposals and criticism can be brought forward (Skov- og Naturstyrelsen 2003, Enggrob Boon 2003).

Planning Policy

Regional Planning

The 14 Danish counties ("amter") are responsible for designation of potential areas for afforestation. This allocation is done through a regional plan, which is prepared every 4 years. The regional plan should represent the societal interests in land use. At the same time, it should contribute to the protection of the country's nature and environment, so that societal development takes place in a sustainable way.

Consequently the regional plan aims to co-ordinate planning and set goals within a series of themes. Examples of these are urban development, tourist development, and use of the 'open land' or countryside (including afforestation). Co-ordination should take a holistic perspective on how society wants to develop in the future (Hovedstadens Udviklingsråd 2001; Regionplan 2001 for Frederiksborg Amt)

The state's policy objective from 1989 to double the Danish forest cover within 80-100 years implied that countries have needed to prepare annexes to the regional plans. In these annexes areas where afforestation was desired or not desired were identified. Guidelines for this allocation task were given in the "Regionplansvejledning om udpegning af skovrejsningsområder" ("Guideline for regional planning on the identification of afforestation areas") from 1990.

In the "Statslig udmelding til regionplanrevision 2001" ("State reaction on regional plan revision 2001") (1998), the following objectives for afforestation are mentioned: increase timber production and enhance consideration of recreation, biodiversity, environmental protection, and increased use of sustainable energy. As compared with earlier statements, particular emphasis is placed on protection of groundwater, promoting peri-urban recreational interests, and enhancement of landscape biodiversity.

In greater Copenhagen, the respective counties were responsible for regional planning until 2001. The 2005 regional plan for the entire area, however, is prepared by a co-ordinating body, The Greater Copenhagen Authority (HUR) which is a politically-governed regional organisation covering the Greater Copenhagen Region.

Interestingly enough, with regards to afforestation, the "Regionalplan 2005 Beretning" ("Regional Plan 2005: Justification) mentions that doubt has arisen on the desirability and

feasibility of afforestation in areas with special groundwater interests. Thus an evaluation if and how afforestation in vulnerable or potential drinking water areas should be undertaken is required. Moreover, differences in recreational structure and use of concepts by the five county units concerns call for formulation of a joint structure and concepts. Examples are concepts such as “regionale friluftsområder” (“regional outdoor recreational areas”), “regionale grønne kiler” (“regional green sources/areas”), “oplevelsrigge udflugtslandskaber” (“experience-rich touristic/recreational areas”), and so forth.

Planning in the municipalities

Recently a debate on the contents and meaning of Green Structure Policies/Plans has arisen. Green Structure Policies includes overall visions and demands for open spaces in cities and towns.

The Green Structure Policy includes primarily the open spaces owned by the local authorities, but can also refer to privately or state-owned open spaces. They provide a comprehensive and cross-sectoral tool where the objectives of new urban woodland are adaptable within a narrower (municipal) perspective. Green Structure Policies can put forward an integrative framework for open space as well as urban woodland management. However, so far only a minority of the Danish municipalities has formalised a municipal green policy e.g. through a green structure policy. Most of the municipalities do have some statements and plans that relate to their green structure in some way.

Integrated Policy

An interesting effort to develop more integrated, cross-sectoral policy is the “Rammeaftalen” (framework agreement) (Fig. 3.1) of October 2002 between the Ministry of the Environment, its Danish Forest and Nature Agency, Copenhagen Energy (a private enterprise also acting as the local waterworks), and the City of Copenhagen. The agreement aims to establish 8 new woodlands around Copenhagen (but mostly on the land of surrounding municipalities) The total envisioned afforestation area is close to 2,600 ha. Woodlands to be established are to be conserved in the future, as they will have protection of Copenhagen’s drinking water resources as primary objective.

The agreement includes earmarking of approximately 18 millions DKK yearly for state afforestation. With these means available, it has been decided to focus on new state forests, based on wide local support from municipalities and waterworks. As a result, strong links between the different public actors need to be established.

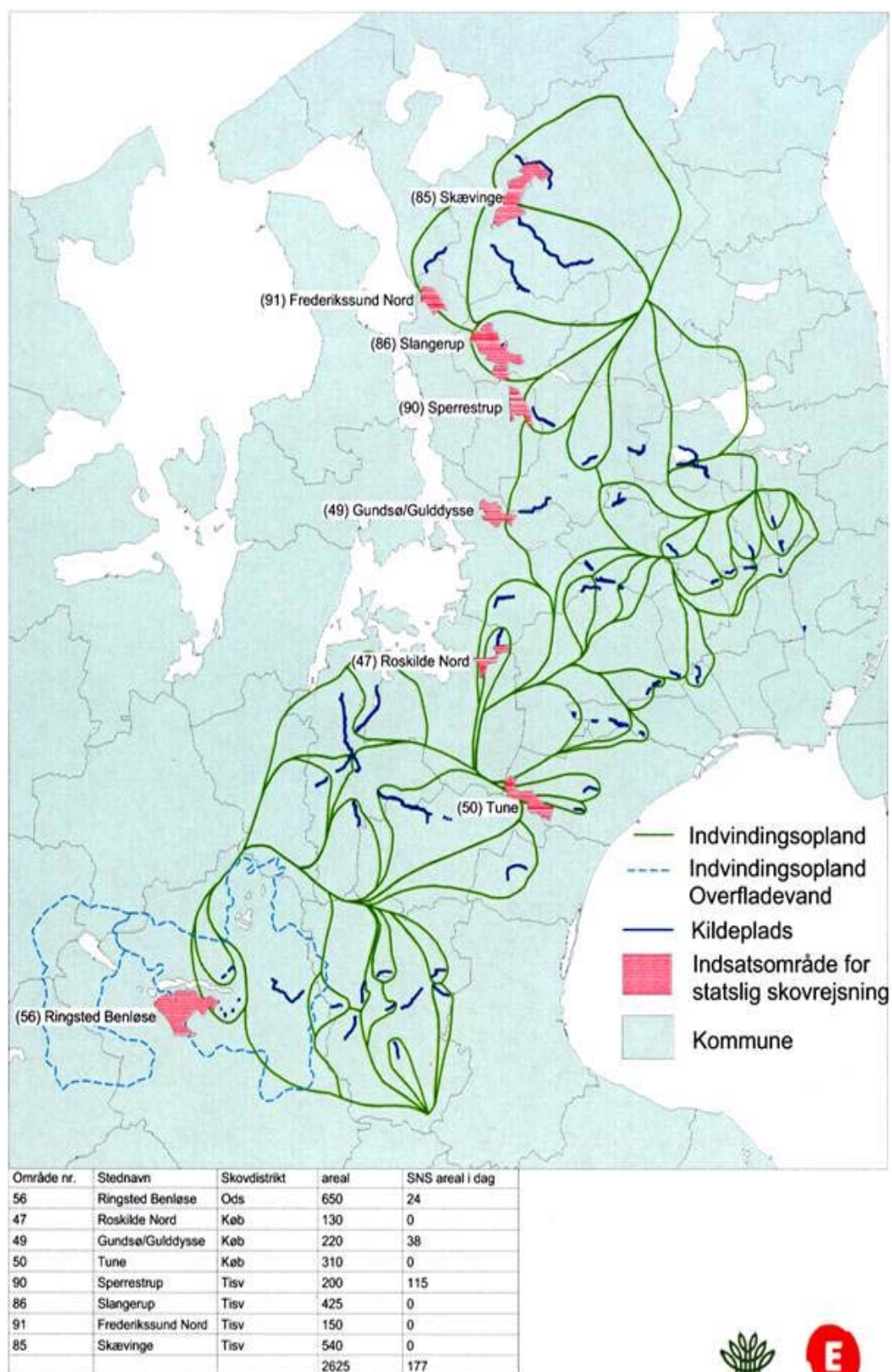


Fig. 3.1 The objective for the framework agreement, October 2002 is to establish 8 new state forests in Greater Copenhagen to protect groundwater resources. (Danish Forest and Nature Agency)

5. Case Studies

The two cases are both situated within the Øresundsregion and part of Greater Copenhagen. (Fig. 4.1)

Grønlien Forest was established in 1998-2000 and has been selected due to recent afforestation, its geographical position, as well as availability of information and multiple stakeholder contacts. The municipality of Frederikssund is part of the “Fingerplan” for larger Copenhagen and has a low forest cover, e.g. due to the good conditions for agriculture.

Himmelev Forest will be established in 2004 and is part of the framework agreement (see p. 9) introduced earlier. It will be one of the first afforestations within this agreement and thus evokes special attention. The municipality of Roskilde has an ambitious department of park management and an inspiring ‘green’ profile.

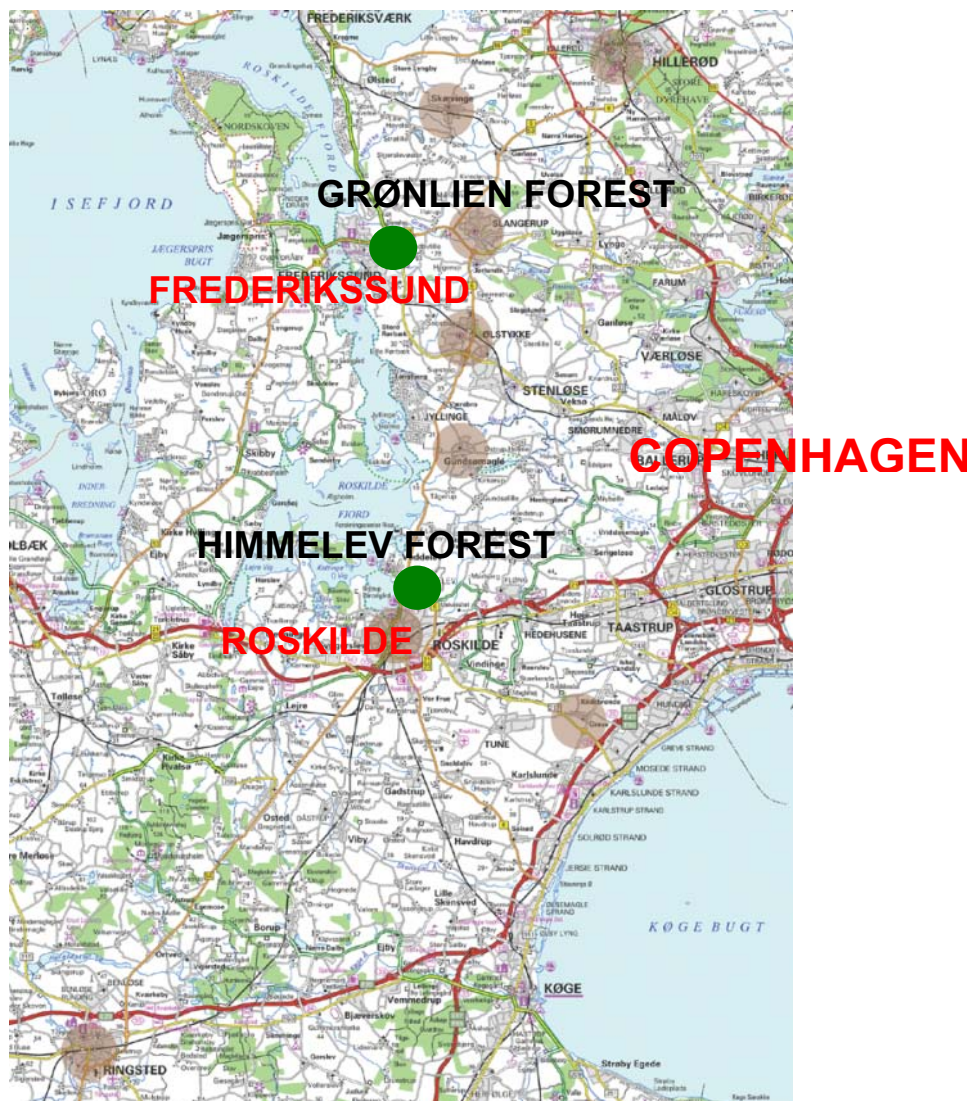


Fig 4.1 The two selected cases are situated in Greater Copenhagen (Kort & Matrikelstyrelsen, GX-04)

Grønlien Forest

FACTS ON GRØNLIE FOREST

Afforestation area:	170 ha
Established area:	65 ha (2003)
State forest:	50 ha
Private forest:	15 ha
State forest district:	Tisvilde
County:	Frederiksborg
Municipality:	Frederikssund
Established:	1998 – 2000
Landscape characteristics:	The forest is placed in an area with groundwater interests.
Land uses:	The remaining areas are mainly used for agricultural purposes.
Forest cover in the municipality:	2 %

Tisvilde State Forest District was contacted by Frederikssund municipality in 1997, which expressed its interest in afforestation. Both parties then jointly set up a preliminary time path for an afforestation project. Moreover, an internal working group was established at the Forest District (Fynboe, pers.comm.).

Meetings with a series of interest groups were also held. These included local associations, kindergartens, etc. These meetings were held before the plans for the new forest were ready, so users had an actual opportunity to influence the establishment, design and functions of the forest (Buch Jepsen, pers.comm.).

A student diploma work provided the basis for forest establishment (Tiedt 1998).

Forest Policy

Tisvilde Statsskovdistrikt administers the state forests and nature areas in the western part of Frederiksborg Amt, with a total area of approximately 9,500 ha. 1,400 ha of these are non-forested areas (Danish Forest and Nature Agency 2003).

With regards establishment of urban woodland, Tisvilde State Forest District used the earlier mentioned internal guidelines for sound state afforestation developed by the Forest and Nature Agency. In addition, the District bases itself on the Regional Plan of Frederiksborg County, in which areas for allocation are identified. Finally, 'learning-by-doing' is an important element of the process. No formal compilation of experiences and 'good practice' exists within the Danish Forest Districts, but some experiences concerning forest management have been gathered (Buch Jepsen, pers.comm.).

The User Board in the District consists of representatives of municipalities, counties, and various outdoor recreational and other interest groups, such as the Agricultural Association. Frederikssund Municipality is represented through the municipal association of Frederiksborg County (Skov- og Naturstyrelsen 2003).

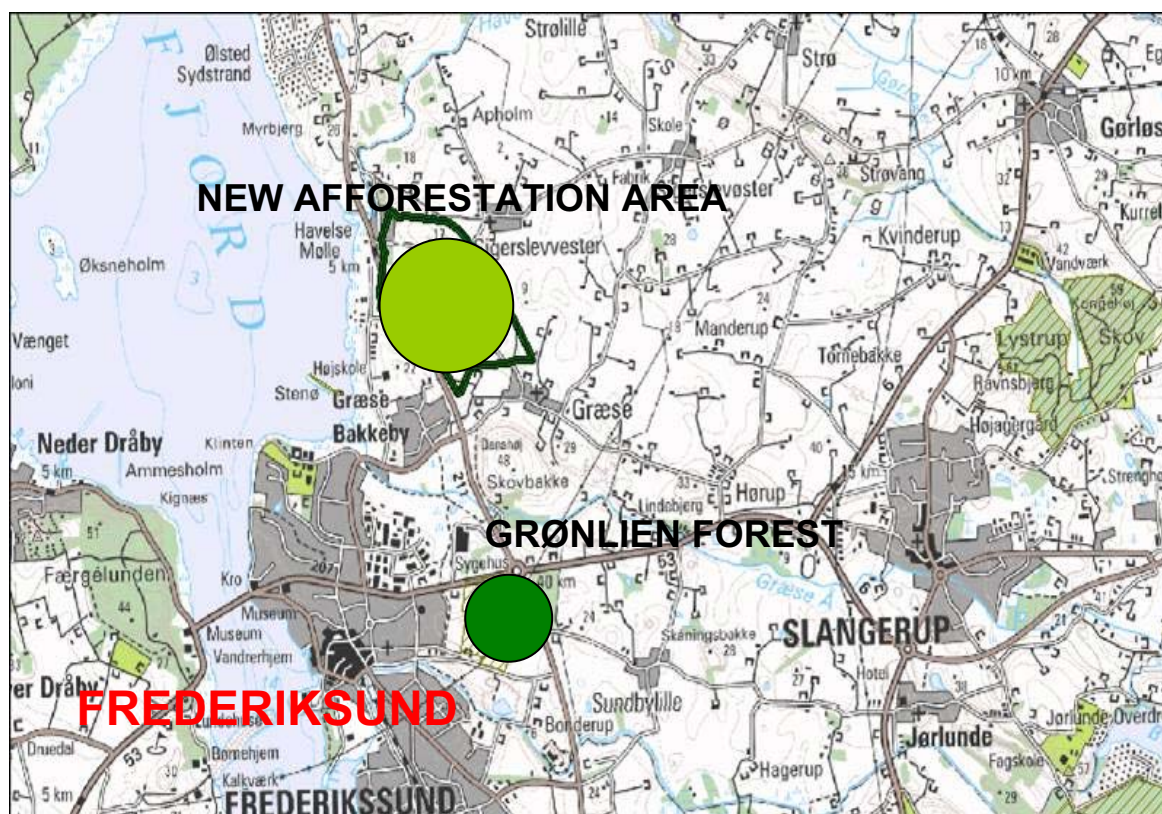
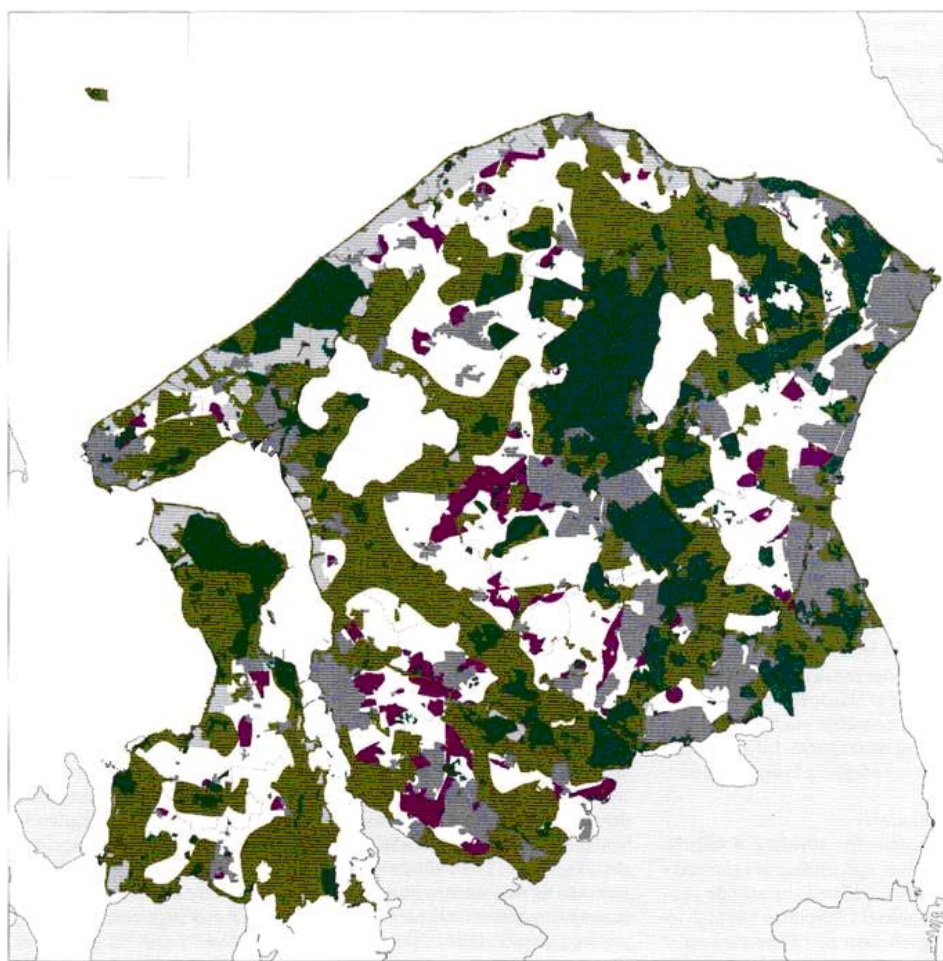


Fig.4.2 Grønlien Forest is placed on the eastern side of the town. North of the town there is an afforestation area that is a part of the Framework agreement. (Kort & Matrikelstyrelsen, GX-04)

Planning Policy

Frederiksborg County is responsible for identification of regional afforestation areas through the Regional Plan (Fig. 4.3). From the most recent Regional Plan (Frederiksborgs Amt 2001) a reduction in the total afforestation area can be derived. This has occurred based on cultural-historical interests (HUR 2001; Frederiksborgs Amt 2001). This reduction is for example based on comments by Frederikssund Municipality, which mentioned that these were seen as important from the perspective of overall landscape considerations, e.g. regarding afforestation and new building (Frederikssund Kommune 2000).

When looking at the establishment of Grønlien Forest, the Regional Plan of 1997 mentioned raw material interests for the selected area. This required a change of the Regional Plan, and within this context Frederikssund Municipality has had a formal dialogue with Frederiksborg County (Fynboe pers.comm.).



2.7 Skovrejsning

- Forest area
- Afforestation area
- No afforestation

Fig. 4.3 The Regional Plan for Frederiksborg County has designated areas for afforestation (Frederiksborg County)

Frederikssund Municipality has no actual, formal park policy or green structure plan. Thus there exists no comprehensive strategy for urban green areas, but all urban development projects are accompanied by preparation of landscape plans (Fynboe, pers.comm.).

According to Frederikssund's 'Strategi 2003' which provides the basis for the new municipal plan (Frederikssund Kommune 2003), however, a political wish exists to develop a 'Landscape Plan' for the municipality. This plan is to provide a framework and guidelines for management of protection-worthy elements in the landscape, among which e.g. the city's outline, the border with the fjord, the open land as well as the water stream valleys.

The Landscape Plan will correspond with the existing 'Municipal Atlas', which is an extensive registration and mapping of municipal cultural environments and buildings from before 1940. The Atlas was made with the objective to inform and inspire citizens, but at the same time it acts as a useful working tool for municipal administrators and planners (Frederikssund Kommune 2003).

The area where Grønlien Forest is established was originally designated as industrial area in the municipal plan. It was partly owned by the municipality with the status of urban zone. This implied that the municipal and local plans needed to be changed before afforestation could take place (Fynboe pers.comm.).

Integrated Policy

The Forest District is part of the 'Rammeaftalen' (see p. 9) through an afforestation area north of Frederikssund. The municipality of Frederikssund has not contacted the District and the Forest District of Tisvilde has not taken any initiative from their side (Buch Jepsen, pers.comm.).

The Municipality of Frederikssund is part of the so-called "Fingerplan" for Greater Copenhagen. The municipalities within this "finger", known as the "Frederikssundfinger" have established a co-operation named 'Bycirklen' (City Circle) for developments in this area. Developments concern reinforcement and preservation of characteristic landscapes, infrastructure planning and green structure planning in both cities and countryside (Bycirkelsamarbejdet 1999).

In 1999 the 'Bycirkel' suggested that many of the designated areas for afforestation in the regional plans would have a negative impact on landscape characteristics, since the allocation did not respect their viewpoints. These remarks were made to Frederiksborg Amt during the public hearing phase of development of the 2001 regional plan (Frederikssund Kommune 2000).

Co-operation

During woodland establishment in 1998, there was a good dialogue between the municipality and the state forest district. Afterwards, however, there was no such co-operation between the two (Buch Jepsen pers.comm.; Fynboe pers.comm.). No formalised collaboration between municipality and forest district currently exists concerning Grønlien Forest, and thus there is no ongoing dialogue about the forest and its development. This is due to lack of resources rather than due to lack of willingness from the side of the municipality of the forest district. Tisvilde Forest District suggests to meet with the municipality once a year to discuss the forests, their development and use (Buch Jepsen pers.comm.).

Neither has there been any co-operation between Frederiksborg County and Tisvilde State Forest Districts concerning the elaboration of regional plans or the establishment of Grønlien Forest. The state foresters mentioned in this respect that designation of afforestation areas by the counties seems rather coincidental; some landscape considerations do not seem to be taken (Buch Jepsen pers.comm.).

Afforestation has been carried out according to a plan which also included proposals that required the municipality to plan forest on their own land. This has not happened. The area concerned is situated between Grønlien Forest and the town and has been transferred to agricultural use. (Fig. 4.4)

The collaboration with land owners is crucial within the context of establishment of Grønlien Forest. Farmers are important actors, as they have a large influence and in general are opposed against afforestation. This resistance also became clear in the case of Grønlien. The initial significant resistance changed, however, when opportunities for economic support for afforestation became apparent. Today, two land owners remain within the allocated afforestation area. One of these has expressed an interest in afforestation. Land owners are represented in the Forest District's User Board through North-Sealand's Agricultural Association (Buch Jepsen pers.comm.).

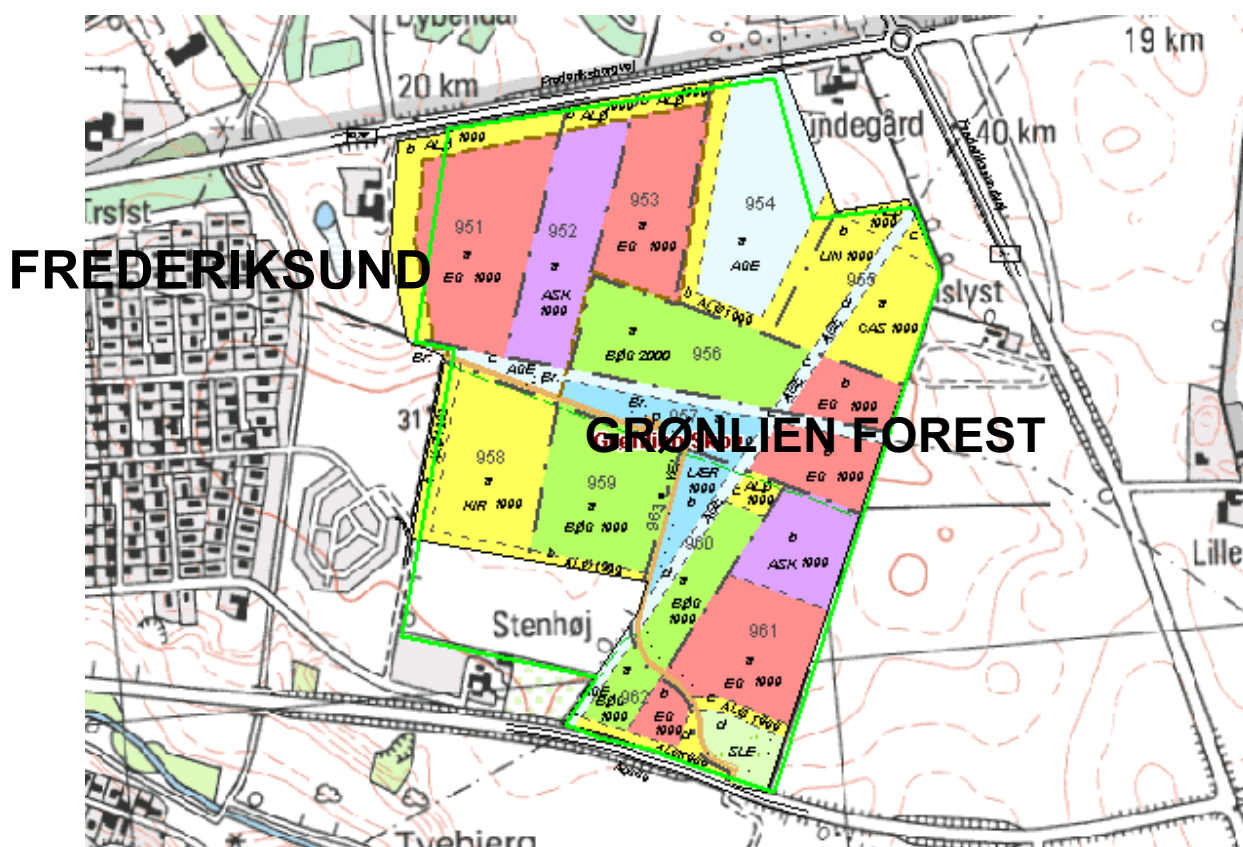


Fig. 4.4 The afforestation area near the city border is owned by the municipality of Frederikssund and not yet established (Skov- og Naturstyrelsen)

Himmelev Forest

FACTS ON HIMMELEV FOREST

Afforestation area:	300 ha
Established area:	0
State forest district:	Copenhagen
County:	Roskilde
Municipality:	Roskilde
Established:	April 2004
Landscape characteristics:	The areas include groundwater interests.
Policies:	The area is pointed out as a part of the framework agreement between the Ministry of Environment, the State Forest, Copenhagen Energy and the Municipality of Copenhagen.
Land uses:	The areas are used for agricultural and raw material purposes
Forest cover in the municipality:	3.5 %

The municipality of Roskilde contacted the Forest district of Copenhagen in 2000 in order to find out how to establish more forest within the municipality.

The designated areas north of Roskilde were identified as a possibility. When the "Rammeaftalen" was in place in October 2002, the department of park management of Roskilde Municipality and the Copenhagen State Forest District started their co-operation for realising the afforestation project: Himmelev Forest. (Fig. 4.5)



Fig. 4.5 Afforestation area in Himmelev, Roskilde (Tina Rasmussen)

Forest Policy

Himmelev forest will be established by the Copenhagen State Forest District, which will become responsible for forest management. Decision power also lies with the District (Søderlund pers.comm.).

The Copenhagen State Forest District administers around 5,800 ha in Greater Copenhagen, of which 3,300 ha are forest and 2,500 ha are other nature areas (Skov- og Naturstyrelsen 2003).

Within the context of new afforestation, an afforestation board was established by the Forest District. One of the objectives of this board is to canalise local knowledge into the project, and at the same time to establish a formalised contact to land owners. The state forester means that the User Board is too general and not sufficiently anchored in the local area. Therefore afforestation boards are established when a start is made at a new location (Søderlund pers.comm.).

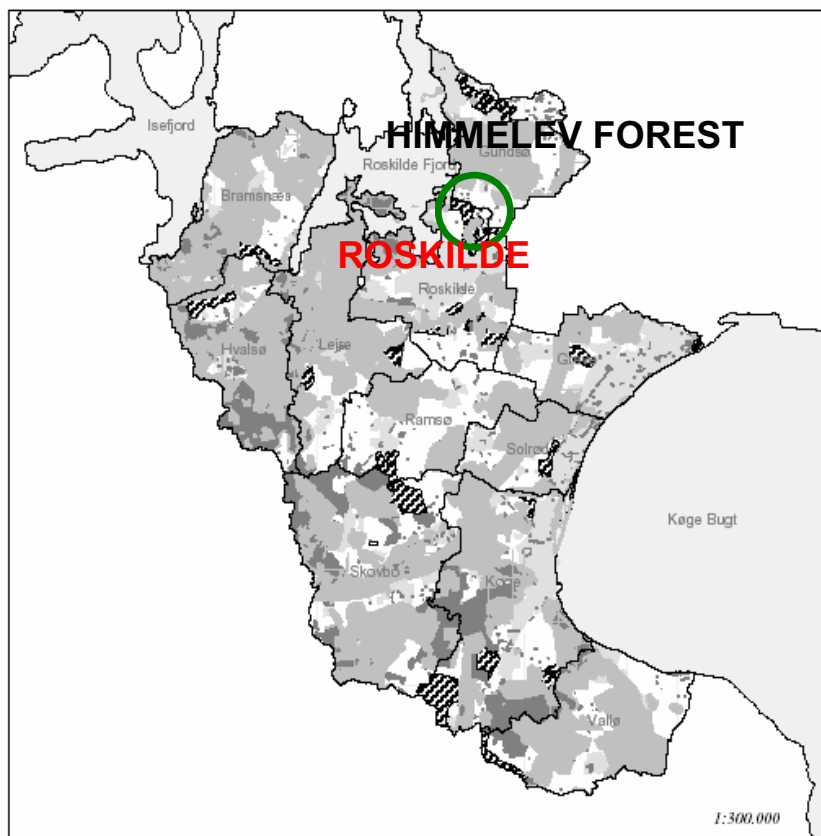
The afforestation board consists of the Nature Conservation Society, local land owners, the Outdoor Council, and local users. Additionally, the Forest District invited several land owner associations to name one joint representative. This should help ensure a broader representation of land owners. Roskilde Municipality participates with one to two politicians. The board can influence the choice of tree species, what activities there will be in the forest, location of thinnings and entrances. The board has no decision power and exist for a period of 5-10 years (Søderlund pers.comm.).

The state foresters organises field trips with the afforestation boards to the new forests in order to provide participants with preferences that do not only relate to 'old' forests.

The general Forest User Board in the district meets twice a year. In addition, one meeting is held during summer - each year in a different forest - to which local inhabitants are invited. This is done to help with local anchoring of the work (Søderlund pers.comm.).

Planning Policy

The physical expansion of the afforestation area is based on the Regional Plan 2001 for Roskilde County - Guidelines (Fig. 4.6) (developed by Hovedstadens Udviklingsråd 2001). The exact delineation of areas is jointly undertaken by Roskilde Municipality and Copenhagen State Forest District. Probably this designation will not fall outside of the allocation done in the regional plan. (Søderlund pers.comm.)



Arealer til skovbrugsformål

- Existing forest
- Afforestation areas
- Possible afforestation areas
- No afforestation

Fig. 4.6 Regional plan for Roskilde County with designation of potential areas for afforestation (Roskilde County)

According to the Municipal Plan 2003, the Roads and Parks Department of Roskilde has to develop a 'Green Plan' for the city within the next 5 years. However, this work has not yet started (Pedersen and Østrup pers.comm).

Part of the municipal plan is the plan or concept known as the "Green Ring". (Fig. 4.7) This envisions a wide, green ring around the city, consisting of agricultural land, forests and outdoor recreational areas. Through the establishment of Himmelev Forest, the objective to establish a green ring around the city of Roskilde will come closer to its target.

The concept of the 'Green Ring' originated in the Roads and Parks Department of Roskilde about 10-15 years ago, and although no formal decision was ever taken it has become part of the municipal plan. The plan has also become an integral part of political conscience, as the mayor of the city in a recent interview mentioned the "Green Ring" as important attraction for Roskilde (Pedersen and Østrup pers.comm.).

In conjunction with planning and establishment of Himmelev Forest, a policy note needs to be prepared in the early project stages in which the forest's functions and perspectives are described. Roskilde Municipality would like to be actively involved in developing a plan for the forest, but lacks the resources needed. The municipality hopes to be able to influence the forest's development at a later stage. (Pedersen and Østrup pers.comm.)

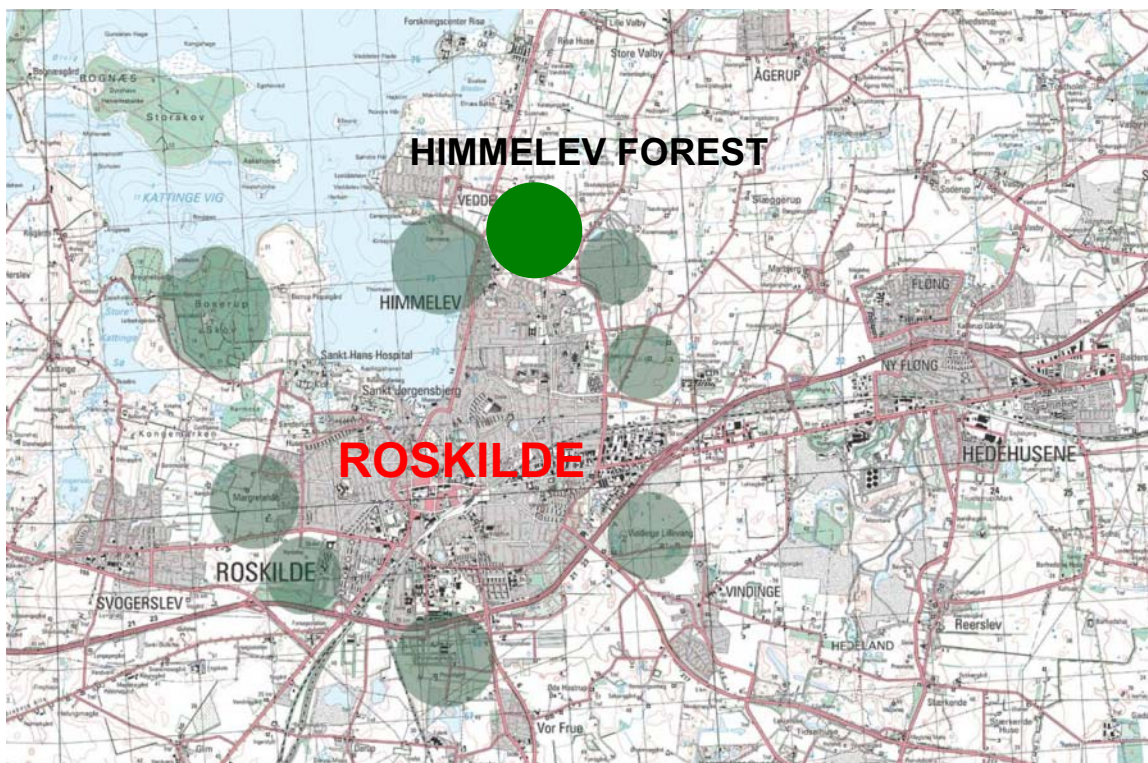


Fig. 4.7 The 'Green Ring' acts as important planning tool for the municipality. The plan is simple and easy to understand, both for citizens and planners. (Municipality of Roskilde)

Integrated Policy

Himmelev Forest is included in the framework agreement (see p.9).

Co-operation

Under the framework agreement, Copenhagen State Forest District and Roskilde Municipality have started a collaboration for planning of Himmelev Forest. In this context a public meeting - attended by about 60 people - was organised.

So far there has been no co-operation between the municipality of Roskilde and Roskilde County as concerns this afforestation case.

The State Forest District has informed the Country about the afforestation project.



Fig. 4.8 The afforestation area is partly used for agricultural purposes. (Tina Rasmussen)

6. Process Challenges

Forest policy

National forest policy and forest programme

The Danish Forest and Nature Agency currently lacks resources, which means that initiatives concerning afforestation have a lower priority than planned. Another main challenge for urban woodland planning and establishment is that no overall initiatives exist to compile the forest districts' experiences with realising and managing urban woodlands.

Manuals and guidelines

The internal guideline or checklist on sound state afforestation (Skov- og Naturstyrelsen 2002) is used by the Forest Districts, as mentioned. This checklist provides guidelines for how to deal with important aspects such as recreation, nature, environmental protection, cultural-historical and landscape considerations, as well as timber production. But this guideline is not sufficient and should be supplemented by guidelines and manuals specifically dealing with how to establish urban woodland.

Apart from the checklist a series of strategies exist that deal with different aspects of afforestation and forest management. None of these explicitly concern urban woodlands. This may not be crucial, as urban woodlands should in the first place be seen as element of municipal strategies for green space and structure. There seems to be political support for this, e.g. through the work within the framework agreement and current focus on collaboration between state and municipalities.

The role of the Forest Districts

The Forest Districts have a determining role in the planning and establishment of new woodlands, as the decision power lies with them. The Danish Forest Districts currently experience major restructuring as part of reorganisation and significant budget cuts. Therefore the ability and resources to embark on new projects will be limited. The Forest Districts are awaiting municipal initiatives within the context of the "Rammeaftalen" and try not to initiate new projects by themselves (Buch Jepsen pers.comm.).

Concerning development of green structure plans this causes a problem, as the basic premise of these plans is to take an integrative perspective and to develop comprehensive plans and strategies.

Planning policy

The role of the Counties

The counties' role only involves designation of suitable and unsuitable areas for afforestation. The study has also shown that collaboration between the counties and municipalities respectively Forest Districts with regards specific projects is limited or even non-existing. Moreover, Frederiksborg County did not wish to participate in this study. This should also be seen from the perspective of planned restructuring and municipal merging which preoccupies the counties at the time.

The role of the municipalities

The two municipalities participating in the study have no formal policy related to parks and green spaces. Perhaps they should consider taking a less traditional perspective on urban woodland planning. A wish to do so seems to exist, as expressed by the interviewed landscape architect working for Roskilde Municipality, as she mentioned that there should be room for experimenting within urban woodlands, for example in terms of choice of species (Østrup pers.comm.).

The political agenda in the municipalities is highly determining for co-operation between the municipality and the Forest District. This underlines the need for some politically accepted guidelines for municipal green space.

Integrated Policy

The lack of co-operation between public actors when urban woodland planning and establishment concerned is a major challenge for policy implementation and success. If co-operation exists, it is often organised informally rather than formally or structured. This causes fragility and results in a lack or absence of common ownership. This situation is weakened further by the political framework, where continuity is hard to come by.

The study has also shown that policy integration and linking of e.g. forest and planning policy is not very well developed. Major opportunities in terms of creating synergy between forest, landscape, regional, and municipal (green structure) plans are therefore not utilised.

The complexity of the policy and planning context is further enhanced by current reorganisations and debates about the role of e.g. the counties. The development of a planning authority for Greater Copenhagen ("HUR") and merging of communities will create challenges of its own which will have their effect on urban woodland planning and establishment.

7. Identified Tools

Based on the analysis presented in this report, a number of promising tools for urban woodland planning, design and management can be identified, with special emphasis of urban afforestation. Some of these tools at national, regional and local level have been (partly) implemented in Denmark, while others would need to be developed.

National level

National policy

The foundation for establishment of urban woodlands is provided by an overall national policy. The recent Danish Act of Forest has different aims for existing and new woodlands. These aims today cover recreation and biodiversity, as well as wood production. The Danish afforestation policy aimed at doubling the forest area within a tree generation is a vision that can generate areas for recreation as well as areas for biodiversity nearby cities. Although this type of national, overall vision can act as a good 'tool', it must be accompanied by resources for establishment in order to be successful. Long-time commitment is needed, and changes in government can affect implementation by regulation of the resources for land acquisition and forest establishment.

Integration of groundwater protection as argument for new woodlands also needs an integrated planning effort in which urban, agriculture and infrastructure planning are taken in consideration and in which longer-term economic commitment is in focus.

General Design Guidelines

For establishment of new woodland General Guidelines provide an effective tool for planning, design and establishment of new woodlands. A guideline for regional planning is needed when multiple purpose aims for new woodlands are requested. For the design of a specific woodland, guidelines could contain demands for preliminary landscape analysis, design of structure and choice of species, as well as establishment methods. General Design Guidelines would enhance efficiency in the design of operational plans, establishment and maintenance of new woodlands. An important part of the guidelines should concern the planning process for involvement of future users and different planning authorities.

National System for Monitoring

Long-term evaluation of the benefits of national investment in new urban woodlands requires the development and implementation of a sound monitoring system. This system should consist of different levels that follow the (differing) rate of development of new woodlands – both geographically and in terms of actual growing rate. This type of system can provide decision-makers with an overview of the implementation pace of national forest policies. On the level of the detailed plan, monitoring can offer woodland planners information about different types of forest design and establishment methods. To the national forest administration a monitoring system can provide tools for a systematic collection of experiences to compile specific knowledge about establishment of new woodlands within the organisation (compilation of experiences, good practice).

Regional level

Regional plans

Essential parts of the Danish policy for locate new woodlands are the regional plans. Consideration in these plans of new urban growth, valuable landscapes and nature protection areas has resulted in regional plans for areas where new woodlands are desirable or where new woodland is unwanted. Regional plans are the foundation for subsidies for private afforestation and public investments. The plans offer protection to open landscapes and other interests when new woodlands have to be established. They provide the frame for municipal planning of urban development into open landscapes.

Framework Agreement

For the implementation of national policies of new woodlands into the local landscapes framework agreements have shown to be an efficient tool for providing resources for land acquisition and woodland establishment. The agreement unites the national as well as regional interests of groundwater protection and woodland expansion with the local needs for new woodland recreation and control of urban development. An overall agreement between the government department of forestry and regional authorities on preservation of drinking water sources provides municipalities with means for expanding urban woodlands. By involving waterworks, (semi-)private actors can become actively and financially involved in afforestation projects. In the case of Greater Copenhagen, the Framework Agreement was developed within the regional plans for new woodlands. Problems associated with this tool can concern questions of responsibility and authority between state, regional and local authorities, as it is a rather unconventional tool for forest planning and requires consideration of multiple interests at different levels. But it provides crucial resources for new woodlands where local interests exist within the frame of the agreement.

Forest District User Board

For the regional evaluation of management of existing forests and assessment of the need for new urban woodlands the existing Forest District User Boards can be used. Today all Danish forest districts have a User Board for discussion of forest management decisions. These boards can easily be granted the additional task to cover the need for new woodlands. This would require an integration of participants from the planning departments at the regional level, politicians from local municipalities, and additional user groups. An extended Forest District User Board could provide the regional forest district with more proactive information about needs for new woodlands.

Local level

Green Structure Plan

For a successful allocation and design of new urban woodlands, the existing infrastructural connections and green structures in the city must be taken in consideration. A local Green Structure Plan can - together with an overall park policy at municipal level - provide the urban woodland designer with information about the existing structure and the actual plans for new parks and other green spaces. The Green Structure Plan can be considered as the working frame for municipal park departments. It offers a possibility for discussing the linkages between local park planning and the forest districts' responsibility in the actual design and future management of new urban woodlands. The Green Structure Plan can make connections from new woodlands to other woodlands, parks, green areas, and ensure that path systems provide maximal accessibility for local residents.

Landscape Plan

For the precise location, design of forest structure, and choice of plants and functions a specific landscape plan is needed. In this Landscape Plan the existing needs, landscape values, and actual growing conditions are analysed in order to develop a design that meets recreational, ecological and aesthetic aims local-level afforestation. The Plan provides municipal planners with a tool for sharing common visions with future users, local authorities and regional planners. It offers designers an opportunity to involve users in the design proces. Within the frame of the Landscape Plan local needs for enhancement of local biological values, protection of landscape viewpoints and control of urban development can be integrated into the planting plan. The Plan can be developed within the frames of the municipal Green Structure Plan.

Local Afforestation Board

In the process of situation, planning and design of new urban woodland there is a need for local users and planners to provide woodland designers with valuable information about local needs and traditions. A Local Afforestation Board with participation from local users, municipal planners and politicians can be of high value for the planning team. The Board can be a forum for discussion and development of new ideas for the specific, future woodland. The Local Board can provide users and local planners with a feeling of actual ownership of the woodland. It can form a linkage between the regional Forest District User Board and the local afforestation project.

8. Perspectives

This study of urban woodland policies has been based on study of national documents, as well as of local case studies in the Greater Copenhagen Region. During the research period information about other new woodland projects has turned up which shows that more - highly relevant - information on this topic is available if cases from the western parts of Denmark are included. In several cases, some of the tools described above have been developed and implemented in a more integrative way than in the two cases described in this study. In Aalborg, the overall Park Policy and Green Structure Plan have shown their value as foundation for regional planning of new urban woodlands. The city's park department has undertaken detailed planning of new woodlands at the urban fringe for protection of groundwater resources. In Ålborg, the cooperation with users and the local Forest District has been ongoing for a long time, with the municipal park department as facilitator. In the city of Aarhus several large woodlands have been established in the urban fringe as a part of the municipal policy to provide local inhabitants with recreation areas. Planning and management is done by a municipal department for nature of which forest and park planning and management are integrated parts.

Besides more case studies further test of identified tools are suggested. Experiences with the use of Local Afforestation Boards could be assessed through further research including interviews with participants in order to evaluate the Boards' success. Further development of the Forest District User Board to also have responsibility in the discussion of region planning in terms of designation of new urban woodlands could be assessed as a tool for enhancing the integration of forest and landscape planning.

Finally, good practice in Green Structure Plans and specific Landscape Plans for new urban woodlands needs to be investigated more in depth. A compilation of examples is required to follow up on former, older research in this area (Olsen 1974).

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Annex 1: List of interviewees

Grønlien Forest

Municipality or State Forest	District Key-person(s)	Date of interview
State Forest District of Tisvilde	Chief Forest Officer Jørgen Buch Jepsen	August 6 th 2003
Municipality of Frederikssund	Chief Planner Per Fynboe	September 24 th 2003

Himmelev Forest

Municipality or State Forest	District Key-person(s)	Date of interview
State Forest District of Copenhagen	Chief Forest Officer Kim Søderlund	August 18 th 2003
Municipality of Roskilde	Chief Park Manager Ivan Hyldested Pedersen & Landscape architect Lisbet Østrup	August 14 th 2003

Annex 2: Case study interviews – general outline

1. General issues and background information

- a1. What is the name, age, title, and address of the interviewee?
- a2. What is the educational and professional background of the interviewee?
- a3. What is his or her precise position/role in relation to urban woodland and/or green structure planning and within which organisation?
- b. What is his or her personal opinion about what 'urban woodland' and/or 'green structure planning' encompass?
- c1. What does the respondent know about the characteristics of the current urban woodland resources in and near the city (in terms of size, number of visitors, species composition, distribution over the city, accessibility, most popular/important areas)?
- c2. Which historical aspects of the urban woodlands are relevant to take into account?

2. 'Environment' of urban woodland policy-making / green structure planning policy-making

- a1. Which (local, regional, national) policies, laws etc. are of special importance for urban woodland?
- a2. What major changes in these policies, laws have occurred over time?
- b. How is the urban woodland seen in a broader (ecological) sense, e.g. in relation to other urban green?
- c. What is the attitude of the local people/public towards urban woodland?
- c2. How are the different urban woodlands used by the local population?

3. Urban woodland: Actors

- a1. Who owns (parts of) the local urban woodland? In what percentages?
- a2. Who plans and manages the local urban woodlands?
- a3. Who uses the local urban woodland?
- b1. Which are the major actors (groups) involved in urban woodland policy-making and/or green structure policy-making? What is their estimated, respective influence? What is the role of local politicians, of various interest groups, of the commercial sector, the media?
- b2. How is public participation in policy-making structured, formalised? Is the local public very active?
- c. What is the general attitude of the local government towards the city's urban woodland?

4. Urban woodland: Policies

- a. What are the major green structure policies or urban woodland policy of the city / the district?

- b1. What are the main policy objectives? Which urban woodland functions and/or green structure functions are favoured?
- b2. Have these objectives and targets considerably changed over time? If so, in what sense?
- c1. What are the main policy instruments used?
- c2. What is the role of specific 'urban woodland instruments' such as public relations, extension, consultation, participation, and judicial/legal instruments?
- c3. How are various instruments combined over time in order to achieve objectives, goals and targets?

5. Urban woodland: Management

- a1. How are policies translated into urban woodland management plans?
- a2. What types of management plans exist?
- b. What are the most important contemporary problems facing management?
- c. Are public and/or interest groups (e.g. environmental movement) involved in management?

6. Urban woodland: Conflicts

- a1. What major conflicts concerning urban woodland have arisen over the past years?
- a2. What were the main reasons for these conflicts (e.g. were most conflicts over different uses, over lack of public consultation, or of a personal nature etc.)?
- b. Which (groups of) actors were involved in the conflicts?
- c1. What was done to try and solve the conflicts?
- c2. Has this proven to be successful?
- c3. What could be done in the future to prevent or at least minimise conflicts?
- d. Should conflicts be seen as a negative or positive phenomenon?

7. Urban woodland: Co-operation between policy actors

- a. Who are the major involved in decision making about nearby urban woodlands (public as well as private)?
- b1. How is co-operation between decision-makers organised, structured? Are consequent steps in the process taken?
- b2. How does communication between various policy actors take place, and how can it be characterised?
- c1. What are the most positive aspects of the current co-operation?
- c2. What are the major problems/deficiencies in the current co-operation between policy actors (with regards urban woodlands)?
- c3. What suggestions for improving these could be given?

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- No. 9 • 2005 Commercial distribution of tree seed in small bags
- No. 10 • 2005 Using Soft Systems Methodology to Develop a Mangrove Forest Management and Planning Decision Support System in a Buffer Zone
- No. 11 • 2005 Integration of Urban Woodland Policies. A case study of Urban Woodland Policies as an element of current Green Structure Planning in Danish communities and the co-operation between public authorities